

IN THE CLAIMS

Please **amend** claims 1, 7, 9, 15, 21 and 25 and **cancel** claims 6, 14 and 24 as indicated:

1. (currently amended) A mobile Internet Protocol extension, comprising:
 - a type field containing a type value identifying a collection of extensions having a common data type;
 - a sub-type field containing a unique number assigned to a member of the collection of extensions identified by the type value within the type field; and
 - a data field containing the data associated with the extension, wherein the type field contains a type value identifying a group of authentication extensions and the data field contains a security parameter index and an authenticator.
2. (original) The mobile Internet Protocol extension of claim 1, further comprising:
 - a length field indicating a length in bytes of the data field within the extension.
3. (original) The mobile Internet Protocol extension of claim 1, wherein the sub-type field follows the type field within a short format for the extension.
4. (original) The mobile Internet Protocol extension of claim 1, wherein the sub-type field is separated from the type field by a length field within a long format for the extension.
5. (original) The mobile Internet Protocol extension of claim 1, wherein the type field is a first field within the extension, followed by the sub-type field and then a length field within a long format or the extension and followed by the length field and then the sub-type field within a short format for the extension.
6. (cancelled)
7. (currently amended) The mobile Internet Protocol extension of claim 1, A mobile Internet Protocol extension comprising:

a type field containing a type value identifying a collection of extensions having a common data type;

a sub-type field containing a unique number assigned to a member of the collection of extensions identified by the type value within the type field; and

a data field containing the data associated with the extension, wherein the type field contains a type value identifying a group of key extensions and the data field contains a first security parameter index, a second security parameter index, and security information required to create a security association.

8. (original) The mobile Internet Protocol extension of claim 1, wherein the type field contains a type value identifying a group of network access identifiers and the data field contains a network access identifier.

9. (currently amended) A method of extending control messages within a mobile Internet Protocol network, comprising:

storing a type value identifying a collection of extensions having a common data type within a type field for a message extension;

storing a type value identifying a group of authentication extensions within the type field, wherein the data field contains a security parameter index and an authenticator;

storing a unique number assigned to a member of the collection of extensions identified by the type value within the type field within a sub-type field for the message extension; and

storing the data associated with the extension within a data field for the message extension.

10. (original) The method of claim 9, further comprising:

storing a length in bytes of the data field within a length field for the message extension.

11. (original) The method of claim 9, further comprising:

placing the sub-type field after the type field within a short format for the message extension.

12. (original) The method of claim 9, further comprising:

placing a length field between the sub-type field and the type field within a long format for the extension.

13. (original) The method of claim 9, further comprising:

placing the type field first within the extension, followed by the sub-type field and then a length field within a long format for the extension and followed by the length field and then the sub-type field within a short format for the extension.

14. (cancelled)

15. (currently amended) ~~The method of claim 9, wherein the step of storing a type value identifying a collection of extensions having a common data type within a type field for a message extension further comprises:~~

A method of extending control messages within a mobile Internet Protocol network comprising:

storing a type value identifying a collection of extensions having a common data type within a type field for a message extension;

storing a type value identifying a group of key extensions within the type field, wherein the data field contains a first security parameter index, a second security parameter index, and security information required to create a security association;

storing a unique number assigned to a member of the collection of extensions identified by the type value within the type field within a sub-type field for the message extension; and

storing the data associated with the extension within a data field for the message extension.

16. (original) The method of claim 9, wherein the step of storing a type value identifying a collection of extensions having a common data type within a type field for a message extension further comprises:

storing a type value identifying a group of network access identifiers within the type field, wherein the data field contains a network access identifier.

17. (original) An Internet Protocol network supporting mobile connections, comprising:

- a mobile communications device;
- a home agent within a home network for the mobile communications device;
- a foreign agent within a network to which the mobile communications device is connected, wherein the home agent and the foreign agent communicate utilizing control messages which may be extended by an extension including:
 - a type field identifying a collection of extensions having a common data type, a sub-type field identifying a member of the collection of extensions identified by the type field, and
 - a data field containing the data associated with the extension.

18. (original) The network of claim 17, wherein the sub-type field is placed in a first location within the extension for a short format of the extension and in a second location within the extension for a long format of the extension.

19. (original) The network of claim 17, wherein the extension includes a length field specifying a length of the data field in bytes.

20. (original) The network of claim 17, wherein the type field identifies a group of extensions selected from the group including an authentication extension, a key extension, and a network access identifier extension.

21. (currently amended) A mobile Internet Protocol extension comprising:

- a type field containing a type value identifying a collection of authentication extensions having a common data type;
- a sub-type field containing a unique number assigned to a member of the collection of authentication extensions identified by the type value within the type field; and
- a data field containing the data associated with the authentication extension, wherein space within the type field is conserved by aggregating extension types identified by the type value.

22. (previously presented) The mobile Internet Protocol extension of claim 21, wherein the mobile Internet Protocol operates in Layers 5-7 of the Open System Interconnection (OSI) model.

23. (previously presented) The mobile Internet Protocol extension of claim 21, wherein the collection of extensions are all network access identifiers.

24. (cancelled)

25. (currently amended) ~~The mobile Internet Protocol extension of claim 21~~ A mobile Internet Protocol extension comprising:

a type field containing a type value identifying a collection of extensions having a common data type, wherein the collection of extensions is all AAA (Authentication, Authorization and Accounting) key extensions;

a sub-type field containing a unique number assigned to a member of the collection of extensions identified by the type value within the type field; and

a data field containing the data associated with the extension, wherein space within the type field is conserved by aggregating extension types identified by the type value.